Drive interaction design: from conceptualisation through prototyping to implementation

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Abstract

In order to forecast problems encountered by the user when designing physical artefacts and interactive systems, it is believed that the device should be plotted (as in a play or movie) in such a way that the sequence of events leading to the interaction becomes a natural response (reaction) as opposed to a learned behaviour (action). Designing physical artefacts requires a focus on user's possible interactions. This article suggests a design process inspired from the theatre field. It involves the user in all the design phases: 1-Requirements 2-Device scenario 3-Precision drawings 4-Interaction rehearsals. Requirements are listed as objects and actions (objects refers to agents or things used by agents and action refers to what the objects do). Device-scenario shows requirements in time and space. Precision drawings show requirement-implementation. Interaction rehearsals simulate the interacting situation. Users will be asked to perform several tasks which will result in efficient testing and verification of earlier hypotheses, substantiate design directions, predict interactions and therefore lead to better devices with which users can interact more intuitively. This process focuses on designing devices based on the user's natural reaction (response) when using a device or a system.

Introduction

A major issue addressed in the context of designing with embodied interaction in mind is how to move from the requirements (user/task analysis) to real design? As opposed to traditional WIMP interface, physical artefacts designed in this context do not exist yet. How to forecast efficiently the problems encountered by the user? Based on the fact that user response to the requirements defines system or artefact functionalities and shape, a focus on user's possible interaction is needed. How to forecast on user's possible interaction based on specific requirements in order to design physical artefact? An area where it is common practice to design artefacts on which people interact based on specific requirements is theatre. How do they proceed in this field? Everything starts with a specific set of requirements: a play or a plot. Action is taking place on a stage, within a set (and the props) intended to support actors in their response to the requirements, i.e.: their performance. Prior to